A Third Reading for Specificational Subjects

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We compare two theories of specificational *be*: the asymmetrical theory and the symmetrical theory. We argue for the latter, based on a three-way ambiguity of specificational subjects.

The ambiguity. (1) and (2) show that the specificational subject *the professor that Fred thought was Mary* supports Readings A and B, in accordance with Romero (2005, 2007).

(1) The professor that Fred thought was Mary was (in fact) Sally.

Reading A: Mary≠Sally, and Fred is acquainted at least with Mary. There is a professor-question Q (e.g., 'Who is the physics professor?'); Fred answers Q by pointing at Mary (or providing a suitable description of Mary), but the actual answer to Q is *Sally*.

(2) The professor that Fred thought was Mary was the physics professor.

Reading B: Fred is acquainted with Mary. There is a professor-question Q (e.g., 'Who is the physics professor?'); Fred answers Q by pointing at Mary (or providing a suitable description of Mary). It is possible that his answer is not the actual answer.

We observe that the specificational subject in (3), with *unicorn* as the head of the relative clause and a definite description after the embedded copula, supports a reading that we call Reading C.

(3) The unicorn Fred thought was the unicorn he saw yesterday was the unicorn he had kissed the day before.

Reading C: Fred's answer to 'Which unicorn did you kiss the day before yesterday?' is *The unicorn I saw yesterday*. In a world without unicorns, the question doesn't have an answer.

We show that both the symmetrical and asymmetrical-*be* theories generate Reading C as a special case of Reading B, but only the latter generates for (3) an unattested reading.

The asymmetrical *be* theory (Romero 2005). This theory analyzes specificational subjects and concealed questions, which also exhibit a A/B ambiguity (see (4); Heim 1979), in a uniform way.

(4) John knows the price that Fred knows. (Context: Q = 'How much does milk cost?')

a. Reading A: Both John and Fred know the answer to Q.

b. Reading B: Fred knows the answer to Q; John knows the answer to the meta-question 'Which price-question does Fred know the answer to'?

Be^{SPEC} and *know* have the semantics in (5) and (6) respectively (σ is a *be*-type; a *be*-type is e or $\langle s,\tau \rangle$, where τ is a *be*-type). Typewise, the "subject" of *be*^{SPEC} matches the "object" of *know*.

(5) $[\![be^{SPEC}]\!]^g := [\lambda w \in D_s \,.\, \lambda y \in D_\sigma \,.\, \lambda x \in D_{\langle s,\sigma \rangle} \,.\, x(w) = y]$.

(6) $[\![know]\!]^g := [\lambda w \in D_s \,.\, \lambda y \in D_{\langle s,\sigma \rangle} \,.\, \lambda x \in D_e \,.\, DOX_{x,w} \subseteq \{w' \in D_s : y(w') = y(w)\}]$

Accordingly, in (7) the type of the trace in the embedded clause is $\langle s,e \rangle$. The external argument of the matrix *be*^{SPEC} is [*the PROF*$^{\langle s,\langle\langle s,e\rangle,t\rangle\rangle}$-$w_0$ [1 [*Fred thought*-w_0 [2 [$t_1^{\langle s,e\rangle}$ *be*^{SPEC}-w_2 *Mary*]]]]] (of type $\langle s,e \rangle$, for Reading A), or its intension (of type $\langle s,\langle s,e\rangle\rangle$, for Reading B).

(7) Reading A – (1): [*the PROF*$^{\langle s,\langle\langle s,e\rangle,t\rangle\rangle}$-$w_0$ [1 [*Fred thought*-w_0 [2 [$t_1^{\langle s,e\rangle}$ *be*^{SPEC}-w_2 *Mary*^{e}]]]]] *be*^{SPEC}-w_0 *Sally*^{e}

Reading B – (2): [3 [*the PROF*$^{\langle s,\langle\langle s,e\rangle,t\rangle\rangle}$-$w_3$ [1 [*Fred thought*-w_3 [2 [$t_1^{\langle s,e\rangle}$ *be*^{SPEC}-w_2 *Mary*^{e}]]]]]] *be*^{SPEC}-w_0 [3 [*the physics-professor*$^{\langle s,\langle e,t\rangle\rangle}$-$w_3$]]

In a parallel fashion, the embedded trace in (8) is of type $\langle s,e \rangle$. Matrix *know* takes [*the PRICE*$^{\langle s,\langle\langle s,e\rangle,t\rangle\rangle}$-$w_0$ [1 [*Fred knows*-w_0 $t_1^{\langle s,e\rangle}$]]] (for Reading A) or its intension (for Reading B).

(8) Reading A – (4a): *John know*-w_0 [*the PRICE*$^{\langle s,\langle\langle s,e\rangle,t\rangle\rangle}$-$w_0$ [1 [*Fred know*-w_0 $t_1^{\langle s,e\rangle}$]]]

Reading B – (4b): *John know*-w_0 [3 [*the PRICE*$^{\langle s,\langle\langle s,e\rangle,t\rangle\rangle}$-$w_3$ [1 [*Fred know*-w_3 $t_1^{\langle s,e\rangle}$]]]]

Romero's analysis of concealed questions has been challenged on various grounds (Frana 2006, Nathan 2006). Independently of that criticism, our point here is that specificational subjects and concealed questions cannot receive a uniform analysis. The problem concerns Reading C of (3).

Reading C. Reading C of (3) may be generated as in (9) (cf. Reading B of (2)).

(9) [3 [*the UNICORN*$^{<s,<<s,e>,t>>}$-w_3 [1 [*Fred thought*-w_3 [2 [$t_1^{<s,e>}$ *be*^{SPEC}-w_2 [*the unicorn*$^{<s,<e,t>>}$-w_2 [4 [*he saw*-w_2 t_4^{e} *yesterday*]]]]]]]] *be*^{SPEC}-w_0 [3 [*the unicorn*$^{<s,<e,t>>}$-w_3 [2 [*he kissed*-w_3 t_2^{e} *TDB*]]]]

But the same assumptions also yield (10) – with an embedded trace of type <s,<s,e>> – predicting, counter-intuitively, that (3) may be felicitous when Fred entertains the belief that he saw two unicorns or no unicorns at all. (10) doesn't guarantee that ⟦ [5 [*the unicorn*$^{<s,<e,t>>}$-w_5 [2 [*he saw*-w_3 t_2^{e} *ystrday*]]]] ⟧^{g} is defined in any of Fred's actual doxastic alternatives.

(10) [*the* ***UNICORN***$^{<s,<<s,<s,e>>,t>>}$-w_0 [1[*Fred thought*-w_0 [2 [$t_1^{<s,<s,e>>}$ *be*^{SPEC}-w_2 [5[*the unicorn*$^{<s,<e,t>>}$-w_5 [6[*he saw* t_6^{e} *ystrday*]]]]]]]]] *be*^{SPEC}-w_0 [3 [*the unicorn*$^{<s,<e,t>>}$-w_3 [2[*he kissed*-w_3 t_2^{e} *TDB*]]]]

The only way to block (10) is to say that nouns cannot be of type <s,<<s,<s,e>>,t>> and/or traces cannot be of type <s,<s,e>>. But this would undesirably block higher order A/B readings (Heim 1979) of *John knows the price that Fred knows*. When Q='What is the price-question that Mary guessed the answer to?', either John and Fred know the answer to Q (A), or Fred knows it and John knows the answer to 'What is the question that Fred knows the answer to?' (B).

(11) Reading A: *John knows*-w_0 [*the* ***PRICE***$^{<s,<<s,<s,e>>,t>>}$-w_0 [1 [*Fred knows*-w_0 $t_1^{<s,<s,e>>}$]]]
Reading B: *John knows*-w_0 [3 [*the* ***PRICE***$^{<s,<<s,<s,e>>,t>>}$-w_3 [1 [*Fred knows*-w_3 $t_1^{<s,<s,e>>}$]]]]

Moreover, Readings A/B in (11) are felicitous when John and Fred don't believe in the existence of unicorns, as long as Q has an actual answer (e.g., 'Mary guessed that unicorns cost $1000'). But *John knows the price that Fred thinks _ is the price of unicorns* is infelicitous when Fred doesn't believe unicorns (exist and) have a price. *Be*^{SPEC} predicts a felicitous reading (similar to the one in (10)). Conclusion: *know* and specificational *be* require different analyses.

A symmetrical non-predicational *be* (Jacobson 1994, Sharvit 1999, a.o.). Non-predicational *be* is the symmetrical *be*$^{NON\text{-}PRED}$ in (12). There is no *be*^{SPEC}, as defined in (5). Unlike other verbs (including predicational *be*) and all nouns, *be*$^{NON\text{-}PRED}$ doesn't take a pronominal world-argument.

(12) ⟦*be*$^{NON\text{-}PRED}$⟧^{g} := $[\lambda y \in D_\sigma \,.\, \lambda x \in D_\sigma \,.\, x = y]$

Assumptions about the syntax: (a) "functional" traces (i.e., traces that take pronominal arguments; Chierchia 1991, 1993, a.o.) may take pronominal world-arguments; (b) Full DPs cannot take pronominal world-arguments. Accordingly, in (13) t_1 is of type e and is interpreted *de re* via a suitable acquaintance relation; in (14)-(15) t_1 is of type <s,e>.

(13) A: [*the professor*$^{<s,<e,t>>}$-w_0 [1 [*Fred thought*-w_0 [2 [t_1^{e} *be*$^{NON\text{-}PRED}$ *Mary*]]]]] *be*$^{NON\text{-}PRED}$ *Sally*

(14) B: [*the PROF*$^{<s,<<s,e>,t>>}$-w_0 [1 [*Fred thought*-w_0 [2 [$t_1^{<s,e>}$-w_2 *be*$^{NON\text{-}PRED}$ *Mary*]]]]] *be*$^{NON\text{-}PRED}$ [4 [*the physics-professor*$^{<s,<e,t>>}$-w_4]]

(15) C: [*the UNICORN*$^{<s,<<s,e>,t>>}$-w_0 [1 [*Fred thought*-w_0 [2 [$t_1^{<s,e>}$-w_2 *be*$^{NON\text{-}PRED}$ *the unicorn*$^{<s,<e,t>>}$-w_2 [3 [*he saw*-w_2 t_3^{e} *yesterday*]]]]]]] *be*$^{NON\text{-}PRED}$ [4 [*the unicorn*$^{<s,<e,t>>}$-w_4 [3 [*he kissed*-w_4 t_3^{e} *the day before*]]]]

Reading C ((15)) is like Reading B ((14)), in that the embedded trace is of type <s,e> (so (15) mimics (9)). But (16) (which corresponds to (10)) is blocked by our assumption (b): it is ill-formed due to the "offending" world-argument (underlined in (16)) of the matrix subject DP.

(16) [*the* ***UNICORN***$^{<s,<<s,<s,e>>,t>>}$-w_0 [1 [*Fred thought*-w_0 [2 [$t_1^{<s,<s,e>>}$-w_2 *be*$^{NON\text{-}PRED}$ [5 [*the unicorn*$^{<s,<e,t>>}$-w_5 [3 [*he saw*-w_5 t_3^{e} *yesterday*]]]]]]]]]-$\underline{w_0}$ *be*$^{NON\text{-}PRED}$ [4 [*the unicorn*$^{<s,<e,t>>}$-w_4 [3 [*he kissed*-w_4 t_3^{e} the *day before*]]]]

Assumption (b) doesn't render any of the LFs in (11) ill-formed; their felicity and the felicity of *John knows the price Fred thinks _ is the price of unicorns* depends on the context.

Further implications. The generation of an unwanted reading for (3) is also a problem for a uniform "clausal" treatment of specificational subjects and concealed questions (Romero 2007). This undermines the bi-clausal analysis of Connectivity in specificational pseudoclefts.